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# Regulating and Coordinating Health Factors

(Salads)

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UNTIL RECENT YEARS fruits and vegetables were looked upon as expensive foods that did not contribute very much to the welfare of the human race. Even the early research workers considered them of poor dietary value. Meat, potatoes, bread, fat and sugar were the main standbys. But the diets prepared for and tested on experimental animals did not bring the results in health, length of life and reproduction of the species that they were expected to. It was then that research workers began looking elsewhere for the reason and found that substances contained in fruits and vegetables were invaluable from a dietary standpoint and that to have a well balanced diet they must be included. It is interesting to note that Mrs. Ellen H. Richards, a pioneer in the teaching of home economics was one of the first to maintain that fruits and vegetables did contain substances that were needed by the body.

The civilian population of the war-swept area of European countries showed the effect of too little fruits and vegetables. Gardens either could not be planted or were destroyed. Diseases due to lack of the vitamins found in fruits and vegetables were very common.

## Supply Now Generally Available

At the present time fruits and vegetables are being used quite generally. They can always be purchased in the city markets at moderate prices. The supply is reaching into the rural districts. In almost every town, even miles off the railroad, there are one or two days a week in the winter when fresh vegetables can be purchased at least at one store. The small town homemaker looks forward to this opportunity to vary her meal planning. Many rural homemakers find that they too can afford it, at least for special occasions. The probability is that within a very few years the fresh fruit and vegetable supply will be even more easily obtained. This is coming about because of their proven value to the body as a result of research and the recognized need for these products by the homemaker. Commercial concerns have been quick to recognize the demand thus created and have been active in meeting it. Great fields

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of fruits and vegetables are cultivated in the warmer climates and large greenhouses are used in the colder regions to meet the demand for fresh fruits and vegetables throughout the year. Also transportation in refrigerator cars and cold storage at the terminals have been improved to bring the supply to the distant homemaker.

### **Making Use of ALL Fruits and Vegetables**

Fruits and vegetables are expensive if they must be bought fresh each day. Therefore, every family in small town or country should have a garden. Carefully prepared ground will always provide a fresh supply of some kind for three months of the year. The wild fruits and greens are not to be overlooked in planning the year's fruit and vegetable budget.

The excess of perishable fruits and vegetables should always be canned because they have an important place in the diet. Canned tomatoes are very valuable from a dietary standpoint. They can easily be used in the menu four times a week. If there is an insufficient amount of the home-canned, commercially-canned fruits and vegetables, especially tomatoes, may be bought inexpensively by the case.

Stored vegetables are almost as valuable as the fresh. Many of the vegetables such as carrots, beets, cabbage, turnips, rutabagas are easily stored. If there is an insufficient amount in the garden they can generally be bought very cheaply by the bushel in the fall.

Dried fruits have an important place in the family fruit and vegetable budget. Dried fruit may be bought comparatively cheap in large packages. The homemaker needs to know the different brands, and the proportionate amount of actual food which each contains.

While the methods of canning, storing, drying and cooking destroy vitamins to some extent, the fact that a great quantity of these cooked foods is eaten makes up in part for the deficiency. Moreover, these foods are valuable from other standpoints.

The best plan is to use the cheapest fruits and vegetables available in quantity and to fill in with those of known dietary value even if they are expensive. If some money can be used for fresh fruit, invest it in oranges or apples, particularly if there are children. Fruits and vegetables, fresh and stored, and canned tomatoes are invaluable and should be included in the diet in generous amounts because the exact number of vitamins and minerals in each food is known only relatively. The homemaker has so many kinds of fruits and vegetables to select from that she should have no difficulty in securing a sufficient amount.

### **Fruits and Vegetables as a Source of Vitamins**

**Vitamin A.** Green leaves are the richest source of Vitamin A. Spinach tops the list. It is richer than butter, weight for weight. Carrots are almost as rich as spinach. Green peas and string beans are about equal. Tomatoes are the richest of all the fruits in Vitamin A. Equal amounts of tomato and lettuce by weight furnish about the same amount. The bleached leaves of lettuce and cabbage are poor sources. Those leaves that do not fold on the head contain more Vitamin A. Roots, tubers and fruits are not high in Vitamin A.

Experiments made to determine the value of vegetable oil, olive, corn, and other oils used in cooking as a source of Vitamin A show that they cannot be depended upon. Probably the vitamin content of vegetable oils depends on the source and the way the product was prepared and refined.

Vegetables rich in Vitamin A can be cooked at ordinary temperature without loss.

Vitamin A is needed by both the adult and child in order to keep in good health.

Vitamin B is widely distributed among the fruits and vegetables. Almost any combination will supply it. Green leaves, especially spinach, rank very high as a source of Vitamin B. Cabbage is a valuable source. Vegetables such as potatoes, turnips, carrots, celery and onions are about equally rich in this vitamin. The tomato is considered a good source. Oranges, lemons, grapefruit are twice as rich as milk.

Vitamin B is not destroyed by heat unless it is above boiling and then it is rapidly destroyed. If the heat is continued over a long time the loss is even greater. The cooking of fruits and vegetables should be done quickly and with as little loss of the juices as possible. If the cooking is carelessly done and the water thrown away probably half of the Vitamin B is lost.

Soda should not be used in the preparation of fruits and vegetables because it will destroy Vitamin B.

The presence of Vitamin B in sufficient amount in the diet means better health.

Vitamin C is not widely distributed. It is found almost entirely among the fruits and vegetables where it is limited to a comparatively small number. The citrus fruits, orange, grapefruit and lemon are a valuable source. Pineapples, peaches and fresh prunes contain some. Among the vegetables, rutabagas, tomato (raw and canned,) cabbage (raw), carrots (raw), and onions are a good source. Apples (raw), bananas, and potatoes, which individually are considered poor sources of Vitamin C, are valuable when eaten in large quantities. However, the homemaker should not use these as the only source of Vitamin C.

Vitamin C is destroyed by the ordinary methods of cooking, canning, drying and storing. Both the length of time of cooking and the temperature are factors in retaining Vitamin C in the diet. Surveys to determine the cause of scurvy outbreaks have been made among groups of people living in institutions. In one survey it was known that the amount of vegetables eaten, if consumed raw, would prevent scurvy. The survey showed that the vegetables were combined with meat in a stew and cooked five hours. Vitamin C was entirely destroyed. Since the vegetables were the only possible source of Vitamin C and that was destroyed by long cooking, a scurvy outbreak was to be expected.

The canning of fruits and vegetables generally destroys Vitamin C. However, Vitamin C is not destroyed in canned tomatoes probably because they require but a short cooking period and contain a vegetable acid which seems to be a factor in retaining Vitamin C. Commercially



canned products such as spinach, string beans, peas, seem to retain Vitamin C better than the home canned.

Scurvy is the disease that may result from too little Vitamin C. It is not common in this country but there is a condition of irritability, no energy, weakness, poor bone growth and poor teeth that are apparently due to too little Vitamin. Parents should be interested in preventing these conditions. Vitamin C is necessary to bring about proper calcification. Probably one reason why American school children suffer from poor teeth is the fact that they do not have enough Vitamin C in the diet in infancy and later years while the teeth are developing.

Sherman states that probably the rheumatism that many people have in the spring following a restricted diet in winter is partially due to too little Vitamin C.

Babies need Vitamin C if they are fed on boiled or pastuerized milk, proprietary foods or even mothers milk. They need orange juice or tomato juice to supply the possible lack of Vitamin C. Rutabaga juice has been used.

The homemaker should plan to use raw, fresh fruits and vegetables and canned tomatoes to secure Vitamin C. She will also use care in cooking so as to retain as much of Vitamin C as possible. A diet of refined cereals, potatoes, meat and cooked fruit is lacking very largely in Vitamin C.

**Vitamin D.**— Green leaves have some Vitamin D, but not enough so that the homemaker can depend upon them alone. Other sources should be used. The ultra violet ray of the sunshine seems to affect the chlorophyll of the leaves producing Vitamin D so that the calcium from green leaves is more readily assimilated.

The presence of Vitamin D in the diet is an important factor in good bone growth and maintenance. Both children and adults need it.

**Vitamin E.**— Green leaves are an excellent source of Vitamin E.

#### **Fruits and Vegetables as a Source of Minerals**

**Iron.**— The vegetables, especially greens, are important sources of iron. Fruits are not to be depended upon for iron. Prunes (dried), strawberries, pineapple, cranberries, huckleberries and tomatoes are among the best but they are low.

Sherman states that in cases of anemia there is likely to be excessive putrefaction in the intestines. The bulkiness of fruits and vegetables, the fruit acids, water and the presence of organic iron tend to overcome this condition. Foods rich in iron are also an aid in the absorption of iron from the digestive tract and in building hemoglobin for the blood.

Vegetables can be used in the diet to increase the iron without increasing the protein and energy supply since they contain very little protein and fat.

**Calcium.**— Fruits and vegetables are valuable sources of calcium. The stem and leaves of green vegetables are the most important, celery, cauliflower, chard, spinach, lettuce and dandelion greens being compara-

tively high in calcium. Rhubarb, rutabagas, turnips, cabbage, carrots, string beans, cucumbers, onions, make up a second group of calcium rich foods. Strawberries, raspberries, citrus fruits, and figs are sources worth considering. Calcium is essential to good bone growth. Therefore, children should have a generous supply. It is also needed by the adult.

**Phosphorous.**— Most of the fruits and vegetables that are high in calcium are high in phosphorous. Spinach, kale, lettuce, celery, cauliflower, cucumber arranged in order of richness, are important sources of phosphorous. Rutabagas and rhubarb contain about the same amount. Peas, turnips, parsnips and dandelion greens, tomatoes, chard, carrots, radishes, onions and cabbage can be grouped together because they are about equally rich in phosphorous. They are not as valuable as the other two groups. Raspberries, strawberries, pineapple, and peaches are also good sources of phosphorous.

Phosphorous and calcium are very closely associated in the body in building good bone structure and in carrying on the daily body processes.

**Iodine.**— Fruits and vegetables are a valuable source of iodine.

#### Other Facts About Fruits and Vegetables

Fruits and vegetables contain so little protein that they are hardly worth considering as a source.

Vegetables and fruits which contain fat, starch or sugar, supply some energy to the body. Most fruits and vegetables furnish practically none.

Fruits and vegetables are valuable because they are bulky and give a sense of fullness more quickly than the more concentrated foods. For that reason they help to prevent overeating.

Fruits and vegetables are an aid in proper elimination of body waste. They contain a woody fiber which is indigestible and gives bulk to the food. They give the muscles of the intestines something to act upon. As a result the waste is moved more readily through the intestinal tract. They furnish mineral salts, acids and water which aid in keeping the intestinal muscles in tone so that they can do their work. The fruits and vegetables aid in destroying the ill effects to the body of a one-sided diet consisting of meat, potatoes and grain products.

Sherman states that dietary studies show that vegetables, fruits, milk and grain products should be included in the diet if it is to be economical and well balanced. Vegetables and fruits furnish iron, calcium and phosphorous, and Vitamin C, especially, which tend to supplement the deficiencies in grain and milk. An increase of fruits and vegetables in the diet means an increase in these minerals and in Vitamin A and C, without increasing the protein.

#### Waterless Cookery

Waterless cookery of food has been receiving special emphasis. The idea was first presented by research workers because of the common practice in most households of cooking foods, vegetables particularly, in

a quantity of water and then throwing the excess water away at the end of the cooking period. Much of the nutritive material, especially the mineral, was lost through this practice. The flavor was impaired. It was to prevent this loss that the suggestion of using very little water or none was advised.

To conserve the mineral and flavor of vegetables it is not necessary to have a special utensil. A small amount of water used with the vegetables in a tightly covered utensil will conserve all the moisture so that the vegetable will not dry out or brown if handled carefully. The heat should not be too intense because the vegetables and fruit should cook slowly. An ordinary utensil such as a tight fitting casserole will serve the purpose. The waterless cookery utensils have a grate to keep the vegetables away from the direct heat and a tight-fitting cover to conserve the moisture. Otherwise they have no special advantages to recommend them.

## Salads

Serve fresh raw salads in generous amounts! Bigger fruit and vegetable salads, served daily, will result in better health!

1. Have all ingredients cold and fresh.
2. Mix materials lightly so that they are not crushed.
3. Have the salad dressing carefully seasoned.
4. Select well-shaped pieces of food for individual salads.
5. Arrange salads attractively for serving.

The color of fruits and vegetables, cooked or raw, is an important factor in the appearance of the meal. The red tomato, red and green pepper, the yellow carrots, oranges, pineapple, red berries, and the delicate green of the lettuce show up to advantage in raw salads. Combined artistically, they are important "tricks of the trade" that the skillful homemaker knows how to use.

## Salad Accessories

1. Buttered strips of bread, browned in oven.
2. Plain sweet wafers or sandwiches with fruit salad.
3. Thin bread-and-butter sandwiches with rich salads.
4. Toasted cheese sandwiches.
5. Soda crackers or salt wafers with cheese, melted in oven and served hot.
6. Salted or cheese pastry strips.
7. Tiny cheese wafers (purchased ready prepared).
8. Small hot baking powder biscuit.

## Recipes

### Mayonnaise

- |                          |              |
|--------------------------|--------------|
| 2 eggs                   | 2 t. mustard |
| 2 c. oil                 | 1 t. salt    |
| $\frac{1}{4}$ c. vinegar | pepper       |

Beat the eggs until lemon colored. Add about two tablespoons of oil at a time (beating constantly). Then alternate the vinegar and oil until all is used. Seasoning may be added at the beginning or when dressing is used.

### Cooked Salad Dressing

- |              |                       |
|--------------|-----------------------|
| 2 T. butter  | 2 eggs                |
| 1 T. flour   | 3 t. sugar            |
| 1 c. vinegar | 1 t. mustard (dry)    |
|              | $\frac{1}{2}$ t. salt |

Melt butter. Add other ingredients and beat. Cook in double boiler. Beat the dressing when cooked. May use more sugar for fruit and substitute one-fourth cup water for vinegar.

### French Dressing

- |                      |                                             |
|----------------------|---------------------------------------------|
| $\frac{1}{4}$ c. oil | 1 t. mustard                                |
| 2 T. vinegar         | $\frac{1}{4}$ t. paprika or pepper and salt |
- Combine all ingredients and beat well.

### Quick Salad Dressing

Combine one-half cup thick white sauce, one cup sour cream, one tablespoon vinegar, one tablespoon prepared mustard, one-fourth teaspoon salt.

### Horseradish Dressing

1 c. whipped cream  
1 T. vinegar

1 T. horseradish  
1 T. prepared mustard

$\frac{1}{4}$  t. salt

Combine cream and vinegar carefully. Fold in horseradish.

### Variations of Cooked or Mayonnaise Salad Dressing

1. Fold one-fourth cup whipped cream into one cup salad dressing.
2. Fold one stiffly beaten egg white into one cup salad dressing.
3. Add one-fourth cup of well cooked thick white sauce to one cup of salad dressing.
4. Add two tablespoons of peanut butter to one cup of salad dressing.
5. Add one-fourth cup of catsup to a cup of salad dressing.
6. Add one cup of the chopped solid part of tomato to one cup salad dressing.
7. Add two tablespoons of diced meat, egg yolk, pickle, olives (green or ripe) onion, green pepper, carrot, salad dressing.
8. Use chopped nuts alone or in combination with above, one-fourth cup chopped nuts to one cup salad dressing.
9. Add two tablespoons each of chopped olives and pickles to a cup of salad dressing.
10. Add two tablespoons each of green pepper and pimento to one cup salad dressing.
11. Add one tablespoon of fine chopped candied orange peel to one cup salad dressing for fruit salad.

### Orange or Grapefruit Salads

1. Place pieces of grapefruit on lettuce leaf. Top with a slice of orange and sweet dressing.
2. Select large orange and grapefruit. Peel and skin out the sections. Place lettuce leaf on plate. Arrange two series of fruit, grapefruit, orange and pear, across the plate. Stripe the top of each with a thin cutting of green pepper.
3. Oranges, sliced, covered with sliced bananas and walnuts.
4. Four dates or soaked prunes, stuffed with cheese on sections of grapefruit or orange.
5. Four slices of orange topped with one of grapefruit on lettuce leaves.
6. Orange or grapefruit sections arranged with cottage or American cream cheese balls on lettuce.
7. Slices of oranges alternated with thin peach sections and walnut meats.
8. Three very thin slices of spanish onion alternated with thin slices of orange on lettuce leaves.
9. Make orange jello. When partially set add fine ground or grated carrot. Cover the first mixture when firm with a lemon jello. When partially set add diced pineapple. Serve with salad dressing. Very attractive made in individual moulds.

### Tomato Salads

1. Arrange slices of tomato, chopped tomato or drained canned tomato in bowl. Mix lightly with salad dressing. Garnish top with slices of hard cooked egg with lettuce. Sprinkle top with paprika.
2. Thin slices spanish onion topped with chopped or sliced tomato and ripe or green olives on lettuce leaf and dressing.
3. Canned tomato, chopped and drained. Arrange on lettuce leaf. Top with grated cheese and serve with dressing.
4. Cucumbers alternated with sliced tomatoes on lettuce and dressing.
5. Three slices of tomato or drained canned tomato with three slices of hard boiled egg on lettuce leaf and dressing.
6. Canned peas or string beans, chopped carrots (raw or cooked) marinated with French dressing on sliced or canned tomato sprinkled with grated cheese and served with dressing.
7. Slices of tomato with rings of green pepper and dressing.

### Miscellaneous Salads

#### Cabbage

3 c. cabbage  
1 c. celery  
1 t. salt

2 green peppers  
1 medium onion  
salad dressing

Chop the cabbage, celery and onion. Combine all ingredients. Serve on lettuce leaf.



### Cabbage-Apple

2 c. chopped cabbage  
1 c. chopped apple  
 $\frac{1}{2}$  c. celery

$\frac{1}{2}$  c. chopped nut meats  
(almonds or walnuts)  
 $\frac{1}{2}$  c. salad dressing

### Pea Salad

2 c. peas  
 $\frac{1}{4}$  c. diced cheese

salad dressing

$\frac{1}{4}$  c. sweet pickle chopped  
2 T. onion chopped

Combine all ingredients. Serve on lettuce leaf.

#### Variations:

1. Omit sweet pickle and onion; substitute one-half cup pineapple.
2. Use one cup chopped apples and one-half cup walnuts and one cup ground raw carrot in place of pickle and onion.

### Eggs With Greens

2 c. cooked greens (hot)  
1 c. diced cheese

$\frac{1}{4}$  c. vinegar

$\frac{1}{2}$  c. salad dressing  
1 teaspoon salt

Combine greens with salt and vinegar. Mix the cheese lightly with the salad dressing. Arrange the greens in bowl and top with dressing. Garnish with slices of egg, chopped parsley or grated cheese.

### Salad Greens (hot)

Smother greens, lettuce or chard in bacon fat. Serve on individual lettuce leaf with sliced egg and salad dressing.

### Fish With Vegetables

To one cup of chopped beans, peas, carrots, or tomato, add one cup of salmon and one-fourth cup of salad dressing. Serve on lettuce or cabbage leaf. All the vegetables may be combined with the salmon for a salad.

### Cheese-Onion Salad

Chop the onions (one cup). Pour hot water over them twice and drain. Combine with one cup of cottage cheese and one-half cup of salad dressing. Serve on lettuce.

### Overnight Salad

1 large can sliced pineapple or apricot  
 $1\frac{1}{2}$  c. white grapes or 1 c. white cherries  
Cut the fruit and drain. Chop the nuts.

$\frac{1}{2}$  c. pecans or almonds  
1 pound marshmallows

### Dressing

4 egg yolks  
 $\frac{1}{2}$  c. sweet milk

1 pint whipping cream

Juice of one lemon  
 $\frac{1}{2}$  t. mustard

Combine and cook the first four ingredients. Cool and add to the whipped cream. Combine the dressing with fruit and nuts. Let the salad stand over night.

—Home Economics Department, State College

Place slice of pineapple on lettuce. Arrange either fresh or preserved strawberries on top.

Pile whole string beans on lettuce. Add cubes of cheese and strips of green or red pepper. Strips of raw carrot may be used in place of cheese.

Arrange three slices of cucumber (fresh or pickled) on lettuce. Top with three thin slices of marinated carrot (raw or cooked) or arrange a row of alternate slices of cucumber and carrot.

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